Problem H: Phony primes

You are chief debugger for Poorly Guarded Privacy, Inc. One of the top selling product, ReallySecureAgent©, seems to have a problem with its prime number generator. It produces from time to time bogus primes N. After a while, you realize that the problem is due to the way primes are recognized.

Every phony prime N you discover can be characterized as follows. It is odd and has distinct prime factors, say $N = p_1 * p_2 * \ldots * p_k$ with $p_i \neq p_j$, where the number k of factors is at least 3. Moreover, for all i=1..k, p_i-1 divides N-1. For instance, 561 = 3 * 11 * 17 is a phony prime.

Intrigued by this phenomenon, you decide to write a program that enumerates all such N's in a given interval $[N_{min}, N_{max}[$, with $1 \leq N_{min} < N_{max} < 2^{31}$, $N_{max} - N_{min} < 10^7$.

1 Input

Each test file contains one line. On this line are written the two integers N_{min} and N_{max} separated by a blank.

2 Output

For each test file, output the list of phony primes in increasing order, one per line. If there are no phony prime in the interval, then simply output `none` on a line.

3 Examples

If the file contains:

```
10 2000
```

the output will be:

```
561
1105
1729
```

and if the file contains:

```
20000 21000
```

then the output will be

```
none
```

This document was translated from L^AT_EX by H^EV^EA.